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Winter grazing and pasture erosion

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Abstract
Winter precipitation, whether it's rain, sleet, or snow, can lead to pasture erosion. Grazing livestock on frozen soil usually causes minimal pasture damage, but grazing pasture when soil is wet or muddy can lead to soil compaction, erosion, and long-term damage to pasture sod. Producers who manage livestock on pasture should consider the potential of soil erosion from winter grazing, particularly on sloped areas.

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Iowa pastures have normally stopped growing by November, so producers have to plan and manage for appreciable forage for fall or winter grazing, and for vegetative cover to protect the soil. The best overall erosion management for pasture is to establish and maintain a good sod cover and residual turf. Extended and close grazing and high animal traffic generally lead to weakened plants, thinner sod cover, and the potential for surface erosion, particularly on sloping sites. Animal traffic on muddy, sloped pastures produces bare soil surface areas and slows grass sod recovery, which can eventually lead to soil erosion.

One management practice recommended for fall grazing is to have an area identified and fenced as a "sacrifice" grazing area for use when conditions are muddy. This sacrifice area should be on a relatively level site, be suitable for reseeding, and be accessible to supplemental feeding and water, if necessary. To further minimize sod damage, bales can be stored in the pasture behind moveable electric fence to limit tractor traffic.

Shelter and feed livestock in areas away from open water bodies. Historically, livestock on pasture have had full access to creeks, rivers, or ponds in pastures in winter, but giving livestock direct access to open water can lead to stream bank degradation, siltation, poor overall water quality, and nutrient pollution and eutrophication. Other problems include animal exposure to bacteria, blue-green algal toxins, foot rot, leg injuries and stress, and calving in mud and streams. It's also a poor way to manage the nutrient cycle because livestock tend to overgraze near the water source and manure tends to collect there.

To address the issue, it is best to fence livestock from waterways and ponds and provide clean water by using pressurized piping systems. Freezing winter temperatures limit the use of many of the summer alternatives to in-stream watering such as nose pumps and aboveground piped water systems. About the only sure way to provide winter water is through underground, pressurized water systems and freeze-resistant valves and tanks. Well-designed solar, wind, or battery pumps; or gravity delivery systems may be applicable to winter watering systems.

Stockpiled forage, or forage allowed to grow and accumulate for use at a later time, is one way to extend the grazing season. Stockpiled forage may be a new concept for many livestock producers. Winter feed costs are the single largest production expense because the

climate in Iowa permits forage to grow during a 7- to 8-month period.

Keeping winter feeding costs low, by adding even an extra 3 to 4 weeks, is a key to profitable production.

The most common stockpiling practice is to allow the forage to accumulate during the last 70-80 days of the growing season. This 70-day period can be achieved by ending summer grazing or harvesting the last summer hay harvest by late July or early August to allow for uninterrupted growth during the stockpile period.

Forage that grows during this autumn period is leafy and high in nutritive value. Nearly any grass or legume species can be stockpiled, but tall fescue is probably used most frequently because of good fall growth and persistence under grazing. Although the palatability of tall fescue is relatively low during the grazing season compared with other grasses, it maintains its quality when exposed to adverse autumn and winter weather.

Winter pasture erosion can be a problem, but it can be controlled with management. Producers who manage livestock on winter pasture should look at management practices that limit potential soil erosion from winter grazing in their operation.

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